

The Issue of Replacing Windows (Rev. 3/13/22)

One of the most common reasons that homes here in Broadmoor have lost their contributing status has been that their original windows have been changed. Changing the windows is sometimes not enough, by itself, to make an otherwise contributing property lose that status. But the loss of the original windows is ALWAYS considered a major negative, and is frequently, on top of other seemingly small changes that have been made over the years to the home, the “final straw” responsible for the loss of the historic distinction.

This is because the original steel casement window was one of the original character-defining features of the houses here in the neighborhood, characteristics upon which our historic district nomination was built. The Neighborhood Association would like to discourage the practice of replacing front windows so that as many houses as possible retain their integrity. Maintaining contributing status is of course important for the homeowner. But if too many homes become ineligible for contributing status, the entire neighborhood will no longer be eligible for listing, and historic district status could be lost.

There are alternative solutions that can improve the performance of the existing windows, and there are window replacement options that will maintain the historic integrity of the houses. Homeowners or contractors who intend to replace their windows but would like to know how to keep their house eligible, should contact Arianna Urban or Eric Vondy at the State Historic Preservation Office (SHPO), and they can provide the appropriate advice. (See the “Key Resource Material” section on this website for the most up-to-date contact information for these SHPO resources.)

Here are some general recommendations for improving window performance from Chris Evans, who was our neighborhood’s consulting architect and created our historic district nomination package:

1. Before replacing windows, first consider the other steps that can be taken to achieve the same desired effect. The idea of replacing the original windows is often motivated by a desire for improved thermal and/or sound-proofing performance. Frequently, you can achieve far greater improvements by adding insulation, providing thermal covers to skylights, etc.
2. If existing window performance is an issue, the first option is to replace the windows elsewhere in the house, and keep only the original steel windows that are visible on the front elevation. Replacing windows that are not visible from the street is not an issue for National Register eligibility.
3. If you still want to replace front-facing windows, replace the glass within the existing steel windows. Using a high performance glass is the best option to retain the historic character of the house while reducing heat gain/loss and reducing sound transmission. This is a cost-effective solution that could be done in combination with other energy improvements, or on its own. (Chris noted that Andy’s American Glass here in Tucson has done this sort of work for some of his clients in the past.)

There are a couple of glass types to consider, and they vary based on energy efficiency, sound reduction, and cost. Here are some recommendations:

- a. 3/8" laminated glass--using 1/4" Pilkington Solar-E (low-e on #1 surface), 0.03 PVB, and 1/8" clear.

This glass will reduce sound transmission by an estimated 75-88% when compared to the existing glass, based on sound performance data. It will also reduce energy gain/loss in the range of 50% when compared to the existing glass.

- b. 5/8" to 3/4" insulated, using 1/4" PPG Solarban 70xl, 1/4-3/8" air space, 1/8" clear glass.

This glass will reduce energy gain/loss by nearly 75% compared to the existing glass. This configuration will also reduce sound transmission substantially, by an estimated 50-75%. The thicker configuration of this glass will require a different installation method.

- c. 1/4" Pilkington Solar-E.

Reduces both sound and energy transmission by roughly 50%.

4. There are new steel sash windows that can be installed with insulated glass, but this is a more expensive option. If this is a solution you are interested in, consider Torrance Steel Windows.
5. Another option has been identified more recently for us by Chris. Western Windows has a "Simulated Steel" line of windows. These may be a good alternative for replacement windows that would likely be less expensive than true steel windows, like Torrance Windows provides. They are not a perfect match, but may be an option. You can see info here:
<https://westernwindowsystems.com/simulated-steel-line> . (This approach should still be reviewed in advance with our SHPO resources to ensure that they are appropriate for your particular house.)

After full consideration, if you do decide to replace the original windows, we encourage you to avoid vinyl or composite windows. Try to match the original steel window appearance as much as possible. Also, we encourage you to salvage the windows that are removed for future use in the neighborhood; some homeowners have expressed interest in restoring the original windows to regain eligibility for listing on the National Register of Historic Places.